

REMARKS

The Office Action dated July 13, 2007 has been received and carefully noted. The following remarks, are submitted as a full and complete response thereto.

As will be discussed below, it is also requested that all of claims 1-6 be found allowable as reciting patentable subject matter.

Claims 1-6 stand rejected and pending and under consideration.

REJECTION UNDER 35 U.S.C. § 102:

In the Office Action, at page 3, item numbered 2, claims 1, 2, 4, and 5 were rejected under 35 U.S.C. § 102 as being anticipated by U. S. Patent No. 5,802,494 to Kuno ("Kuno"). The Office Action took the position that Kuno describes all the recitations of independent claim 1 and related dependent claims. This rejection is traversed and reconsideration is requested.

Independent claim 1, upon which claims 2-6 are dependent, recites an image transmission system for a mobile robot, including a camera for capturing an image as an image signal, a microphone for capturing sound as a sound signal, and human detecting means for detecting a human from the captured sound. The system also includes a power drive unit for moving the robot toward the detected human, an image cut out means for cutting out an image of the detected human according to information from the camera; and image transmitting means for transmitting the cut out human image to an external terminal.

As will be discussed below, Kuno fails to disclose or suggest the elements of any of the presently pending claims.

Kuno does not teach or suggest, at least, “human detecting means for detecting a human from the captured sound” and “a power drive unit for moving the robot toward the detected human,” as recited in independent claim 1. From the description and figures provided in Kuno, the robot 5 is positioned in front of or next to the patient so the facial features may be detected and monitored. There is no description or suggestion in Kuno that the data-acquisition section 1 is capable of detecting a human from captured sound and providing a power drive unit that would move the robot 5 towards the patient. Instead, as previously indicated, the robot 5 is placed next to the patient, the robot 5 then captures facial features of the patient, and the robot 5 then would captures any sound signals, such as speech, from the patient to transmit them to a doctor for patient diagnosis.

On page 13 of the present Office Action, it is contended that column 24, starting at line 54 describes detecting a human from the captured sound. However, Applicants respectfully submit that it appears that the Office Action is not carefully considering the recitations of the present claims and not properly considering the actual description provided in Kuno. Specifically, column 24, lines 39-67, of Kuno is actually describing the various types of responses that a patient may provide in response to messages. In column 24, lines 39-43, Kuno provides that “The subject can make various types of responses to the aural, visual or tactual message given to him or her from the monitor

room, asking him and her if he or she agrees to be monitored.” One type of response is the one that the Office Action refers to starting at line 54 of column 24. This portion of Kuno provides that “another response is an oral or aural one. In response to the message given, the subject talks into the microphone mounted on the robot 5 or located at the bedside, and his [sic] or speech is recognized by the speech recognition device built in the robot 5, whereby the subject’s approval or disapproval is conveyed to the physician.”

However, as clearly described in Kuno, the robot 5 is **not** detecting a human from the captured sound. Rather, the robot 5 of Kuno is simply acting as a microphone to receive a speech message from the patient to then transmit it to the monitor room indicative of approval or disapproval to be monitored. The speech message received by the robot 5 of Kuno is not to detect the human. The robot 5 of Kuno is placed by an individual next to the patient. The robot 5 of Kuno is not capable of and is not configured to being positioned itself next to the patient based on the detected patient from the captured sound.

Furthermore, to reject the feature, “a power drive unit for moving the robot toward the detected human,” as recited in independent claim 1, on page 14, the Office Action refers to column 28, lines 28-37, as providing for such claimed feature. However, the referred portion of Kuno provides the following, “Another drive mechanism is incorporated in the trunk of the robot 5. When this mechanism is actuated, the robot 5 moves in any direction on the floor. The drive mechanisms incorporated in the robot 5 **are remote-controlled** by operating the monitor console of the monitor section 2. Thus,

under the control of the monitor section 2, the robot 5 is moved to a desired position with respect to the subject, and its head is turned, bent and vertically moved until its nose (i.e., the zoom-lens cylinder) is directed to the subject's face.” (Emphasis added)

Based on this description of Kuno, on page 14 of the Office Action, it is erroneously concluded that “once the robot has recognized aural “approval,” the robot then uses the power drive unit to move its hand towards the patient.” However, Kuno does not support such conclusion reached in the Office Action. Rather, Kuno clearly provides that the robot 5 includes a drive mechanism which is remote controlled and under the control of the monitor section 2. Thus, a human operator is actually controlling the movement of the robot 5. The robot 5 of Kuno is not moved based on the detected human, detected from the captured sound as in independent claim 1. Once the operator positions the robot 5 of Kuno by remote controlled in front of the patient, the robot 5 then captures facial features of the patient, and the robot 5 then would captures any sound signals, such as speech, from the patient to transmit them to a doctor for patient diagnosis.

Accordingly, it is respectfully asserted that Kuno fails to teach or suggest all the recitations of independent claim 1 and related dependent claims 2-6. It is respectfully requested that the rejection to the claims be withdrawn.

REJECTION UNDER 35 U.S.C. § 103:

In the Office Action, at page 7, claims 1, 2, 5, and 6 were rejected under 35 U.S.C. § 103 as being unpatentable over U.S. Publication No. 2004/0028260 to Higaki et al. (“Higaki”) and Kuno. The Office Action took the position that Higaki and Kuno disclose all the aspects of claims 1, 2, 5, and 66. The rejection is traversed and reconsideration is requested.

As will be discussed below, Higaki and Kuno fail to disclose or suggest the elements of any of the presently pending claims.

Because the combination of Higaki and Kuno must teach, individually or combined, all the recitations of the base claim and any intervening claims of the dependent claims, the arguments presented above supporting the patentability of independent claim 1 over Kuno are incorporated herein.

Higaki generally describes a posture recognition apparatus recognizing instructions signified by postures of persons present in the surrounding from images obtained with an image capture device. According to the Office Action, paragraph [0041] of Higaki provides “human detecting means for detecting a human from the captured sound” and “a power drive unit for moving the robot toward the detected human,” as recited in independent claim 1. However, paragraph [0041] of Higaki, similarly to other portions of this reference, fails to teach or suggest these recitations of independent claim 1.

For instance, paragraph [0041] of Higaki describes FIG. 1 as a block diagram showing the configuration of the embodiment. In this figure, reference symbols R denotes a biped walking autonomous robot. Reference symbols 1L and 1R denote stereo cameras (hereunder called simply cameras) employing 2-color CCDs, with L and R denoting the left side camera and the right side camera respectively. Reference symbol 21 of Higaki denotes a microphone that picks up the voice of a person speaking. Reference symbol 5 denotes a processing section which performs a posture recognition process employing mainly image processing. Reference symbol 71 denotes a setting file in which the relationships between human postures and corresponding instructions are pre-defined. Reference symbol 72 denotes a face database in which human facial recognition information is predefined. Reference symbol 9 denotes an action control section that controls the drive parts (head, arms, legs etc.) of the autonomous robot R.

However, contrary to the contentions made in the Office Action, there is no teaching or suggestion providing human detecting means for detecting a human from the captured sound and a power drive unit for moving the robot toward the detected human. Rather, Higaki appears to provide a search device that searches for a candidate for a hand of a person based on the outline and the distance to the body represented by the outline.

For the reasons previously set forth, Kuno would not cure the deficiencies of Higaki. Accordingly, a combination of both references would fail to teach or suggest all the recitations of independent claim 1. It is therefore respectfully requested that all of claims 1, 2, 5, and 6 be allowed, and that this application be passed to issue.

In the Office Action, at page 10, claim 3 was rejected under 35 U.S.C. § 103 as being unpatentable over Higaki, Kuno, and further in view of U.S. Publication No. 2000/326274 to Shinichi ("Shinichi"). The Office Action took the position that Higaki, Kuno, and Shinichi disclose all the aspects of claim 3. The rejection is traversed and reconsideration is requested.

As will be discussed below, Higaki, Kuno, and Shinichi fail to disclose or suggest the elements of any of the presently pending claims.

Because the combination of Higaki, Kuno, and Shinichi must teach, individually or combined, all the recitations of the base claim and any intervening claims of dependent claim 3, the arguments presented above supporting the patentability of independent claim 1 over Higaki and Kuno are incorporated herein.

Shinichi generally describes an acting robot in which an image input device 1 inputs an image of one of cameras of a stereo-camera to a man detecting device 2, and inputs the images of both cameras to a distance calculating device 3. The man detecting device 2 detects a man by image processing, and extracts a face area of the man to follow up the face area thereafter. A man distinguishing device refers the information on an image of the man stored in a man information storing part 5, and a voice input device 6 consists of three microphones attached to a body, and outputs the inputs to a voice source direction detecting device 7. An obstacle detecting device 10 calculates a distance value

to an obstacle of every ultrasonic wave sensor 9 and holds the same, and a touch sensor 11 distinguishes a rubbed state and a tapped state and outputs the same.

However, Shinichi does not cure the deficiencies of Higaki and Kuno. Similarly to Higaki and Kuno, Shinichi does not teach or suggest, at least, “human detecting means for detecting a human **from the captured sound**” and “a power drive unit for moving the robot toward the detected human,” emphasis added, as recited in independent claim 1. Rather, from the description and figures provided in Shinichi, the image input device 1 inputs the image of one of cameras of a stereo-camera to a man detecting device 2, and inputs the images of both cameras to a distance calculating device 3. Similarly to Higaki and Kuno, there is no description or suggestion in Shinichi that the distance calculating device 3 is capable of detecting a human from captured sound and providing a power drive unit that would move the robot towards the patient.

Accordingly, it is respectfully asserted that Kuno and Shinichi fail to teach or suggest all the recitations of independent claim 1 and related dependent claim 3. It is respectfully requested that the rejection to the claims be withdrawn.

In the Office Action, at page 10, claim 4 was rejected under 35 U.S.C. § 103 as being unpatentable over Higaki, Kuno, and further in view of U.S. Patent No. 6,278,904 to Ishii (“Ishii”). The Office Action took the position that Higaki, Kuno, and Ishii disclose all the aspects of claim 4. The rejection is traversed and reconsideration is requested.

As will be discussed below, Higaki, Kuno, and Ishii fail to disclose or suggest the elements of any of the presently pending claims.

Because the combination of Higaki, Kuno, and Ishii must teach, individually or combined, all the recitations of the base claim and any intervening claims of dependent claim 4, the arguments presented above supporting the patentability of independent claim 1 over Higaki and Kuno are incorporated herein. Ishii, in turn, generally describes a floating device allowing an entire robot main body to float at a side.

However, Ishii does not cure the deficiencies of Higaki and Kuno. Similarly to Kuno, Ishii is devoid of any teaching or suggestion providing, at least, “human detecting means for detecting a human from the captured sound” and “a power drive unit for moving the robot toward the detected human,” as recited in independent claim 1. Contrary to the contentions made in the Office Action, in view of the descriptions of Higaki and Kuno, a person of ordinary skill in the art would not be motivated to combine the floating device of Ishii with Higaki and Kuno.

MPEP 2143.01(V) states “THE PROPOSED MODIFICATION CANNOT RENDER THE PRIOR ART UNSATISFACTORY FOR ITS INTENDED PURPOSE,” (Capital letters in original.) and explains that “If proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification.” Moreover, MPEP 2145(III) states that “the claimed combination cannot change the principle of operation of the primary reference or render the reference inoperable for its intended purpose.” The

proposed combination of Higaki, Kuno, and Ishii would change the fundamental principles of Higaki's and Kuno's operation, and, thus, is per se non-obvious under MPEP 2143.01(V).

It is evident that Kuno's patient monitoring system and Higaki's posture recognition apparatus could not be configured to add a mechanism allowing a patient to float in the water and having an entire main body to float at a side as provided in Ishii. Accordingly, the proposed combination is improper, unmotivated hindsight reconstruction.

Accordingly, Applicants respectfully request that the rejection of claim 4 be withdrawn because the combination is per se non-obvious and because there is no proper motivation to combine the references, and thus a *prima facie* case of obviousness has not been established.

CONCLUSION:

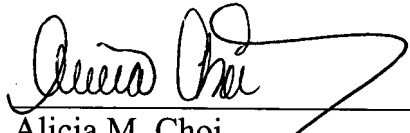
In view of the above, Applicants respectfully submit that the claimed invention recites subject matter which is neither disclosed nor suggested in the cited prior art. Applicants further submit that the subject matter is more than sufficient to render the claimed invention unobvious to a person of skill in the art. Applicants therefore respectfully request that each of claims 1-6 be found allowable and this application passed to issue.

If for any reason the Examiner determines that the application is not now in condition for allowance, it is respectfully requested that the Examiner contact, by telephone, the Applicants' undersigned attorney at the indicated telephone number to arrange for an interview to expedite the disposition of this application.

In the event this paper is not being timely filed, the Applicants respectfully petition for an appropriate extension of time.

Any fees for such an extension together with any additional fees may be charged to Counsel's Deposit Account 50-2222.

Respectfully submitted,


Alicia M. Choi
Registration No. 46,621

Customer No. 32294
SQUIRE, SANDERS & DEMPSEY LLP
14TH Floor
8000 Towers Crescent Drive
Tysons Corner, Virginia 22182-2700
Telephone: 703-720-7800
Fax: 703-720-7802

AMC:dc